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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,202	02/20/2002	Zaher A. Samman	US020048	9268

24737 7590 12/08/2005

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER

NATNAEL, PAULO S M

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/080,202		SAMMAN ET AL.	
	Examiner		Art Unit	
	Paulos M. Natnael		2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10-11-05 & phone interview of 11-28-05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-14 is/are allowed.
- 6) ☒ Claim(s) 1,3,5,7 and 15-19 is/are rejected.
- 7) ☒ Claim(s) 2,4,6 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is a response to inquiries made by applicant's representative on November 28, 2005 on the status of claims 15-19. In the previous office action, claims 15-19 were inadvertently left out from consideration by the examiner. The Final Rejection mailed June 6, 2005 is hereby withdrawn/vacated. This Office Action is therefore made a non-final. Examiner regrets the confusion and inconvenience this may have caused the applicant.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims **15-19** are rejected under 35 U.S.C. 102(e) as being anticipated by George, U.S. 6,606,130.

Considering claim **15**, George discloses all claimed subject matter, note;

a) the claimed display, one or more projectors, a deflection signal generator, at least two optical sensors that are mounted adjacent to opposing sides of the display, are met by the screen 700, CRTs RG and B, Deflection Amplifiers 600 and 650, and sensors S1-S8, respectively. (fig.2)

b) the claimed processor that is configured to: receive signals corresponding to the output of each of the at least two optical sensors, combine the signals to form an adjustment measure, and provide the adjustment measure to the deflection signal generator, is met by Control Logic 301 which receives the sensor data from the detector 275 which detects the signals received from the sensors S1-S8 and sends command to the deflection amplifiers through the bus 951, controlling the amplitude and wave shape of the deflection signals. (col. 2, lines 48-65 and col. 3, lines 14-32)

c) the claimed, wherein the deflection signal generator is configured to modify a path of a projection from at least one of the one or more projectors to the display, based at least in part on the adjustment measure, is met by the disclosure on col. 2, lines 48-65 where is taught that "The horizontal deflection coil sets are driven by a horizontal deflection amplifier 600 and vertical deflection coil sets are driven by a vertical deflection amplifier 650. Both horizontal and vertical deflection amplifiers are driven with deflection waveform signals that are controlled in amplitude and waveshape via data bus 951 and synchronized with the signal source selected for display. Exemplary green channel horizontal and vertical convergence coils 615 and 665 respectively, are driven by amplifiers 610 and 660 respectively, which are supplied with convergence correction waveform signals. The correction waveform signals GHC and GVC may be considered representative of DC and AC convergence signals, for example static and dynamic convergence. However, these functional attributes may be facilitated, for example by

modifying all measurement location addresses by the same value or offset *to move the complete raster* and achieve an apparent static convergence or *centering effect*."

[emphasis added by examiner]

4. As to claims **16-19**, see the rejection of claim 15(c) above. (i.e. disclosure quoted above from George's col. 2, lines 48-65)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims **1,3,5,7** are rejected under 35 U.S.C. 103(a) as being unpatentable over George, U.S. Pat. No. 6,606,130.

Considering claim 1, George discloses the following claimed subject matter, note;

- a) displaying a test pattern consisting of a raster center adjust pattern, is met by the test pattern displayed on Fig.1;
- b) receiving an output signal from each of at least two optical sensors located on opposing sides of a display screen, is met by the sensors S1-S8, fig.1;
- c) combining the output signals to form an adjustment measure, is met by the disclosure that using the sensor positions a test pattern is electronically generated (col. 2, lines 27-

35). That is to say, George teaches that "...Thus with these sensor positions it is possible to measure an electronically generated test pattern, for example peak video value block M, to determine picture width and height and certain geometric errors, for example, rotation, bow, trapezium, pincushion etc., and thereby align the displayed images to be superimposed one with the other over the whole of the screen area. Measurements are performed in both horizontal and vertical directions in each of the three projected color images thus yielding at least forty-eight measured values. See col. 2, lines 27-38. Although George does not use the term "combine", it is nonetheless inherent that the said "sensor positions" output by the sensors are combined, added to each other, mixed, blended or merged and sent to the logic which generates the "test pattern".

d) adjusting the centering of the raster based on the adjustment measure, is met by the disclosure that "Controllers 900 and 301 also position block M to illuminate exemplary sensor S1 by determining horizontal and vertical timing to position block M within the scanned display raster or by moving the scanned raster, or a part of the scanned raster containing the marker block M." [emphasis added by examiner] col. 3, lines 20-25 see also col. 2, 48-65.

Except for;

e) the claimed "rear" projection television.

Regarding e), George discloses a projection television display apparatus. Although George does not specifically disclose "rear" projection television display, it

would have been obvious to the skilled in the art to modify the system of George by providing the well known rear projection display in order to make the system more versatile and compact, because the rear projection display is designed in the same cabinet or box as opposed to the front projection display apparatus.

Regarding claims **3, 5, and 7**, see rejection of claim 1;

Response to Arguments

7. Applicant's arguments filed 12/9/04 have been fully considered but they are not persuasive.

a) Applicant argues that George does not teach combining signals from sensors located on opposing sides of a display screen to form an adjustment measure; consequently, George does not teach using such an adjustment measure to adjust a raster. George processes the signal from each of the sensors independently...George is silent with regard to combining measurements from multiple sensors.

b) Applicant argues referring to claim 1 that George does not teach forming an adjustment measure from the output signals of two optical sensors, and George does not teach adjusting the centering of a raster based on such an adjustment measure. Applicant argues also George does not teach forming an adjustment measure from the output signals of two optical sensors, and George does not teach adjusting the width of a raster based on such an adjustment measure; that George does not teach forming an

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adjustment measure from the output signals of two optical sensors; that adjusting the Linearity of a raster based on such an adjustment measure. In response to the applicant's prior remarks, the office action fails to identify an adjustment measure in George that is formed by combining the output of two opposing sensors, and fails to identify a teaching in George wherein this (non-existent) adjustment measure is used to adjust the centering, width, linearity, or height of a raster. The Office action notes that George teaches receiving an output signal from multiple sensors, but fails to identify a teaching in George that the signals from opposing sensors are used to form an adjustment measure, as specifically claimed in each of the rejected claims.

In response, the examiner submits that (1) George teaches:

"The horizontal deflection coil sets are driven by a horizontal deflection amplifier 600 and vertical deflection coil sets are driven by a vertical deflection amplifier 650. Both horizontal and vertical deflection amplifiers are driven with deflection waveform signals that are controlled in amplitude and wave shape via data bus 951 and synchronized with the signal source selected for display. Exemplary green channel horizontal and vertical convergence coils 615 and 665 respectively, are driven by amplifiers 610 and 660 respectively, which are supplied with convergence correction waveform signals. The correction waveform signals GHC and GVC may be considered representative of DC and AC convergence signals, for example static and dynamic convergence. However, these functional attributes may be facilitated, for example **by**

modifying all measurement location addresses by the same value or offset to move the complete raster and achieve an apparent static convergence or centering effect." (col. 2, 48-65) [emphasis added]

(2) George discloses, "a plurality of photo sensors located adjacent to edges of said display screen and each one of said plurality of photo sensors generating an output signal when illuminated and responsive to an intensity of said projected image; a detector receiving a controllable threshold value and said output signal generated by said each one of said plurality, said detector generating a detector output signal having a first state when said output signal generated by said each one of said plurality photo sensors is greater than a threshold value, and a second state when said output signal generated by said each one of said plurality photo sensors is less than said threshold; a detection threshold generator coupled to said detector and generating said controllable threshold value; and a controller coupled to said detection threshold generator and said display device and generating a digital word for said threshold detector in accordance with said each one of said plurality of photo sensors, and responsive to said detector output signal having a first state said controller generating a controllable threshold value for another one of said plurality of photo sensors. (see col. 14, line 60 thru col. 15, line 15).

(3) In regards to the word combine (which also means, according to Merriam Webster's 10th edition dictionary, to act together, to join, intermix, blend, or merge), the claim does not elaborate whether or not by combining it is meant to add #1 and #2 together and take the total as an output. Thus, given a reasonably broad interpretation,

the combination of the signals (currents, I) detected by the detector 275 are transmitted to the logic chip 300 and stored in memory and/or used to generate a digital word by the controller in order to drive the amplifiers 610, 660, for example. See col. 4, lines 36 through col. 5, lines 8.

Fig.2 illustrates the video projection apparatus comprising sensors 1-8 which output signals which signals are detected by the detector 275 which in turn sends the signals to the logic 301. Using the sensor positions, the logic generates a test pattern electronically (col. 2, lines 27-35), which process involves receiving the output signals of the sensors. The microprocessor utilizes this signal to generate the test pattern used to control the block M which in turn is used to control or adjust the raster itself. In other words, the generated test pattern is received by the device. Furthermore, George discloses that controllers 900 and 301 also position block M to illuminate exemplary sensor S1 by determining horizontal and vertical timing to position block M within the scanned display raster or by moving the scanned raster, or a part of the scanned raster containing the marker lock M." Column 3, lines 20-25. Therefore, although George does not use the word combine it would be obvious to those with ordinary skilled in the art that when the system of George, using the sensor positions, generates a test pattern electronically, the process would have to involve receiving the output signals of the sensors and the microprocessor would have to combine the signals to generate the test pattern which is used to control the block M, which in turn is used to control or to adjust the raster itself as disclosed and shown in the quoted passage above. Thus, the argument is unpersuasive and the claims remain rejected for the reasons above.

Allowable Subject Matter

8. Claims **9-14** remain allowable over the prior art.

9. Claims **2,4,6, and 8** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to disclose, a method for adjusting a raster geometry in a rear projection television receiver, comprising the steps of: setting the height and width controls for the raster to respective maximum values; displaying a first test pattern consisting of a raster projection pattern; measuring and storing the maximum output from said optical sensors; displaying a second test pattern consisting of a center adjust pattern; adjusting the centering of the raster based on the outputs of the optical sensors located on the lateral sides of the display screen; displaying the first test pattern; adjusting the width of the raster based on the outputs of the optical sensors located on the lateral sides of the display screen; adjusting the height of the raster based on the outputs of the optical sensors located above and below the display screen; adjusting the linearity of the raster based on the outputs of the optical sensors located above and below the display screen; and re-adjusting the height of the raster based on the outputs of the optical sensors located above and below the display screen, as in claim **9**;

An arrangement for adjusting a raster geometry in a rear projection television receiver, comprising, a controller having an input coupled to receive the digitally converted sensor output signal, a first output coupled to said sensor output selector for selecting one of the sensor output signals, a second output coupled to the video signal processing circuit for causing the video signal processing circuit to process the test pattern from the pattern generator, a third output coupled to the pattern generator for selecting one of the test patterns, and fourth outputs coupled to the control input means of the video signal processing circuit for controlling the centering, height, width and linearity of the raster generated by said one color video signal projector, wherein said controller performs the following functions: sets the height and width controls for the raster to respective maximum values; displays a first test pattern consisting of a raster projection pattern; measures and stores the maximum output from said optical sensors; displays a second test pattern consisting of a center adjust pattern; adjusts the centering of the raster based on the outputs of the optical sensors located on the lateral sides of the display screen; displays the first test pattern; adjusts the width of the raster based on the outputs of the optical sensors located on the lateral sides of the display screen; adjusts the height of the raster based on the outputs of the optical sensors located above and below the display screen; adjusts the linearity of the raster based on the outputs of the optical sensors located above and below the display screen; and re-adjusts the height of the raster based on the outputs of the optical sensors located above and below the display screen, as in claim 14;

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Minami et al., U.S. 5,742,698 discloses an automatic image adjustment device;

Kobayashi, U.S. 6,056,408 discloses method and displaying projected image and projection-type image display apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (571) 272-7354. The examiner can normally be reached on 10:00am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571)272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paulos M. Natnael
Primary Examiner
Art Unit 2614